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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,422	12/12/2003	Jeiwei Chang	HTIRC02-015	3911

7590 05/15/2006

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EXAMINER

CHACKO DAVIS, DABORAH

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 05/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/734,422

Applicant(s)

CHANG ET AL

Examiner

Daborah Chacko-Davis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 35-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-34, in the reply filed on 04/17, 2006 is acknowledged. The traversal is on the ground(s) "that it is necessary to obtain claims in both the process and product claim language, and that the process claims necessarily use the product and viceversa. This is not found persuasive because the process can be used to make a materially different product such as VLSI circuits. Applicant's argument that the Examiner's suggestion is speculative has not been substantiated. Claims 35-38, are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-34, are rejected under 35 U.S.C. 102(e) as being anticipated by U. S. Patent No. 6,643,107 (Hasegawa et al., hereinafter referred to as Hasegawa).

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Hasegawa, in col 5, lines 55-67, in col 6, lines 1-24, and lines 33-55, in col 7, lines 1-67, in col 28, lines 6-12, in col 29, lines 48-67, in col 30, lines 6-12, in col 41, lines 40-67, discloses a method of forming a magnetic head comprising a spin valve that includes laminating a substrate, an antiferromagnetic layer, a seed layer (first pinned layer), a second pinned layer, a nonmagnetic conductive layer (spacer layer), a free magnetic layer (free layer), a protective layer (capping layer, Ta), an upper core layer (lead layer), and an insulating layer of alumina formed on the lead layer (upper core layer), forming a resist mask on the spin valve (GMR stack, a sheet of material of first thickness), wherein the width of the photoresist mask determines the width of the first pedestal (width R1), directing an ion beam at an angle relative to an axis perpendicular to the mask surface on the spin valve, wherein the substrate can be rotated or moved obliquely, the ion beam removing material in a region closest to the surface of the mask (undercut see figure 5), and removing material from a surface in the region extending outwards from a line (T10, shadowing effect of the mask) parallel of the side of the mask (forming a slope that extends outwards in the second pedestal region, see figure 3) at a distance from the mask as claimed (the distance determined by the height or thickness of the photoresist mask, causing the resist mask shadowing), and obliquely bombarding the stack with the ion beam as recited in the claims (the oblique angle of incidence of the beam at both sides being equal, symmetrical pedestal formation, see figures 8, and 12), thereby determining the width of the second pedestal, wherein the substrate can be obliquely moved or rotated with respect of the axis perpendicular to the surface of the substrate (claims 1, 9, 18, 25, 26-27). Hasegawa, in

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col 29, lines 49-54, and in col 30, lines 7-10, the ion beam source can be stationary or obliquely moved, and that the substrate can be rotated or moved or kept stationary with respect to the axis perpendicular to the substrate surface (claims 2-4, 10-12).

Hasegawa, in col 28, lines 49-55, and in figures 2-3, and 5, discloses that the first angle and the second angle (angle A and angle B) are in the claimed ranges (shadowing effect angled ion beam impingement, and oblique incidence of the ion beam) (claims 5-6, 13-14, 21-22, 29, and 30). Hasegawa, in col 20, lines 5-57, in figures 5, and 12, discloses that the bottom pedestal is at least twice the width of the first pedestal (top pedestal) width with the claimed thickness, and the top pedestal possesses a steeper sidewall (undercut) than the bottom pedestal, and has the claimed aspect ratio, and thickness(claims 7-8, 15-17, 20, 23, 24, and 31-34). Hasegawa, in col 23, lines 25-47, and in col 24, lines 15-28, discloses that the magnetic head (spin valve magnetic material) has a GMR ratio of at least 1%, and less series resistance (less than 50 ohms) (claims 19, and 28).

Conclusion


4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daborah Chacko-Davis whose telephone number is (571) 272-1380. The examiner can normally be reached on M-F 9:30 - 6:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F Huff can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dcd

May 11, 2006.



JOHN A. MCPHERSON
PRIMARY EXAMINER